

EXPOSURE TO ASBESTOS

A Resource for Veterans, Service Members, and their Families

What is asbestos?

Asbestos is a fibrous mineral that occurs naturally in the environment. There are six different types of asbestos fibers, each with a somewhat different size, width, length, and shape. Asbestos minerals have good heat resistant properties. Given these characteristics, asbestos has been used for a wide range of manufactured goods, including building materials (roofing shingles, ceiling and floor tiles, paper products, and asbestos cement products), friction products (automobile clutch, brake, and transmission parts), heat-resistant fabrics, packaging, gaskets, and coatings. The use of asbestos in new construction materials was banned in the early 1970's because of the health risks associated with asbestos exposure.

What are the sources of asbestos exposure for service members?

In the past, the military used many asbestos containing material (ACM) products because of their excellent heat resistance, insulation, and fireproofing capabilities. Some of the ACM that the military used included brakes, gaskets, valves, cements, adhesives, and floor and pipe coverings, called lagging. In particular, the Navy used ACM in its shipyards and ships that were built by the Navy before the mid-70s. The Ships often contained multiple asbestos-containing materials in the engine and boiler rooms and other areas below deck for fire safety purposes. ACMs also were used in navigation rooms, sleeping quarters, and mess halls.

How are service members exposed to asbestos?

Because asbestos has been so widely used in our society, most people have been exposed to some asbestos at some point in time. Asbestos is most hazardous when it is friable. This means that the asbestos material is easily crumbled by hand, thus releasing fibers into the air. People are exposed to asbestos when ACMs are disturbed or damaged, and small asbestos fibers are dispersed in the air. These fibers may get into the lungs through the air that we breathe. Individuals who only have contact with intact asbestos-containing building materials (that is not fraying, peeling, or falling apart) are not expected to be at risk for asbestos exposure.

Service members at risk for asbestos exposure include:

- Those involved in renovation of asbestos-containing structures and/or removal of asbestos materials either before or after 1970.
- Navy Veterans who served on ships whose keels were laid before 1983.
- Navy Veterans who worked in ship yards from the 1930s through the 1990s, as asbestos was widely used in ship building and construction materials during that time frame.
- Navy personnel who worked below deck before the early 1990s since asbestos was often used below deck and the ventilation was often poor.
- Navy Seamen who were frequently tasked with removing damaged asbestos lagging in engine rooms and then using asbestos paste to re-wrap the pipes, often with no respiratory protection and no other personal protective equipment especially if wet technique was not used in the removal.
- Service members who worked with, handled, damaged or disturbed any ACM may have had some asbestos exposure as a result.
- Pipe fitters, welders, boiler operators, building renovation and demolition specialists who worked in any of the services before the mid-1990s may have had exposure.

How can asbestos affect my health?

Whether a service member develops health effects as a result of their asbestos exposure depends on several factors:

- **THE AMOUNT AND DURATION OF EXPOSURE.** People who are exposed more frequently to asbestos over a long period of time are more at risk.
- **WHETHER OR NOT YOU SMOKE.** If you smoke and have been exposed to asbestos, you are far more likely to develop asbestos related problems than someone who does not smoke and who has not been exposed to asbestos.
- **HISTORY OF A PRE-EXISTING LUNG CONDITION.** If you have an underlying lung condition and are exposed to asbestos, you may be at greater risk.
- **AGE.** Studies have shown that the younger people are when they inhale asbestos, the more likely they are to develop asbestos related problems.

Asbestos can cause a number of health effects that range from not usually very serious to very serious. Mainly these health effects involve the lungs or membranes around the lungs. Asbestos related health effects are:

- **PLEURAL PLAQUES.** These are scars of the lining that surround the lungs (called the pleural membrane) and they usually contain some calcium. They appear on chest X-rays as small (usually less than one quarter of an inch diameter) plaques or plates on the outside of the lungs. Finding pleural plaques on a chest X-ray or a chest Computed Axial Tomography (CAT) scan is considered proof that asbestos exposure did occur sometime in the past. In the overwhelming majority of cases, pleural plaques do not cause any symptoms at all. These plaques also do not mean that the person is at any higher risk of developing one of the serious asbestos related health problems than someone with equal exposure but no pleural plaques.
- **ASBESTOSIS.** This is a condition in which the asbestos fibers that were inhaled cause the lung tissue to scar up and actually cause the soft, very thin lung tissue to become thick, stiff, and fibrotic. This can be a progressive process which causes shortness of breath because it reduces the efficiency of the lungs to bring in oxygen for the body and increases the amount of work that the lung and chest must do

to expand and contract the lungs. Asbestosis may be associated with a chronic cough or bronchitis; however it does not cause asthma, emphysema, or sleep apnea. Asbestosis is a serious disease and can eventually lead to disability and death.

- **LUNG CANCER.** High and/or prolonged exposures to asbestos dusts can cause cancer in humans. There are two types of respiratory cancer caused by exposure to asbestos: mesothelioma and lung cancer. Mesothelioma is a cancer that affects the mesothelium (a thin membrane that covers and protects most of the internal organs of the body). This is a type of cancer that only occurs in people with significant asbestos exposure. Most cases of mesothelioma affect the membrane surrounding the lung (pleural membrane) or abdominal cavity (the peritoneum). Lung Cancer is a type of cancer that forms in the tissues of the lung, usually in the cells that line the air passages. This is the same type of cancer that develops in cigarette smokers, people exposed to Radon gas and other causes, that is, it is not unique to people with asbestos exposure. This type of lung cancer occurs more often each year in asbestos exposed people than does mesothelioma. Cancer from asbestos does not develop immediately. Rather, it often shows up after a number of years. It usually does not manifest for 20 to 30 years or more after the onset of exposure. People who smoke and are exposed to asbestos have a risk of developing lung cancer that is 65 times that of the general population.
- **OTHER CANCERS.** Research studies have looked at the risk of getting cancer in parts of the body other than lungs. An Institute of Medicine (IOM) committee determined that asbestos exposure might be related to cancers of the pharynx, larynx, stomach, and colon and rectum.

Is there a test for asbestos and what does it show?

A thorough exposure history, physical exam, and diagnostic tests are needed to diagnose an asbestos-related condition. A chest x-ray is a useful screening tool to identify lung changes resulting from asbestos exposure. Scarring of the lining of the lungs (pleural plaques) can confirm exposure to asbestos dusts, but does not determine whether or not you will have any health problems from asbestos. In persons with high and/

or prolonged exposures to asbestos, scarring of the lung tissue (asbestosis) may be seen on chest-x ray twenty or more years after their first exposure to asbestos. Lung function tests and CAT scans also may assist in the diagnosis of asbestos-related lung disease. Individuals who have had high and/or prolonged exposures to asbestos dusts are encouraged to follow-up periodically (every 1-2 years) with their treating physicians to monitor symptoms such as shortness of breath, cough, etc., to determine the need for further diagnostic testing of their lungs for early detection of asbestos-related disease(s).

What can I do if I have health concerns related to asbestos?

Being exposed to asbestos does not mean that you will develop health problems. If you are a Veteran who believes may have been exposed to asbestos, it is important to remember the following:

- If you smoke, stop. The combination of cigarette smoke and asbestos together significantly increase your chances of getting lung cancer. If you have

been exposed to asbestos fibers/dust, this may be the most important action that you can take to improve your health and decrease your risk of asbestos-related cancer.

- Schedule regular medical examinations with your primary care doctor.
- Keep up to date with your vaccinations (for example, flu shot, and pneumovaccine if indicated).

If you are concerned about health problems associated with exposure to asbestos during your military service, contact the:

Environmental Health Coordinator:

http://www.publichealth.va.gov/PUBLICHEALTH/exposures/eh_coordinators.asp

or

Patient Care Advocate at your nearest VA medical facility:

http://www2.va.gov/directory/guide/division_fish.asp?dnum=1.

Other Web site Resources:

Content for this fact sheet was adapted from the following sources:

Agency for Toxic Substances and Health Registry

<http://www.atsdr.cdc.gov/NOA/Asbestos-and%20Health.pdf>

Institute of Medicine

<http://www.iom.edu/Reports/2006/Asbestos-Selected-Cancers.aspx>

United States Army Center for Health Promotion and Preventive Medicine

<http://chppm-www.apgea.army.mil/documents/FACT/AsbestosFS07.pdf>

United States Department of Labor Occupational Safety and Health Administration

http://www.osha.gov/OshDoc/data_AsbestosFacts/asbestos-factsheet.pdf